Profiling Float Observations in the Aegean Sea

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LONG-TERM GOALS

It is the long-term goal of this work to gain a better understanding of the circulation of the Aegean Sea. While the nations bordering the Aegean Sea each have individual programs in scientific exploration and analysis of the Sea, these efforts have only recently begun to be well-coordinated, and the most modern technology has not been used. It is the goal of this work to begin a coordinated effort to study the Aegean Sea with modern profiling floats.

OBJECTIVES

The objective of this work was to collect a large number of high quality temperature and salinity profiles from the Aegean Sea during all seasons, over the course of several years, in order to be able to examine the circulation above 1000 m. The deep circulation in the Aegean Sea has not been previously well-observed over long periods, and it is planned to examine this circulation for the first time in this work.

APPROACH

In order to carry out this work, 4 profiling floats are being deployed in the Aegean Sea between 2004 and 2006. A parking depth of near 700 m has been chosen for all of the floats, with CTD profiles collected every 5 days.

WORK COMPLETED

Funds for this work were received from ONR in the spring of 2004. The first two floats were built at UW during 2004 and a training visit to Seattle for the Greek PIs was arranged for early in 2005. In March of 2005 the first two floats were deployed by Greek scientists in the Aegean Sea, as can be seen in Figure 1. One float lasted only one and a half months before it grounded and was lost. The other float is still working well, completing 114 profiles through September 2006. Two more floats were

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built at UW and shipped to Greece, where they were deployed by Greek scientists early in 2006. These floats continue to work well.

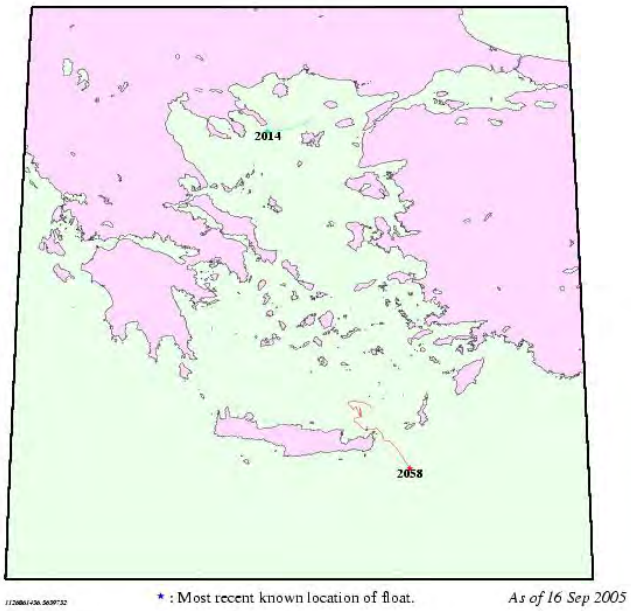

Figure 1. Trajectories of 2 profiling floats deployed in the Aegean Sea in 2005.

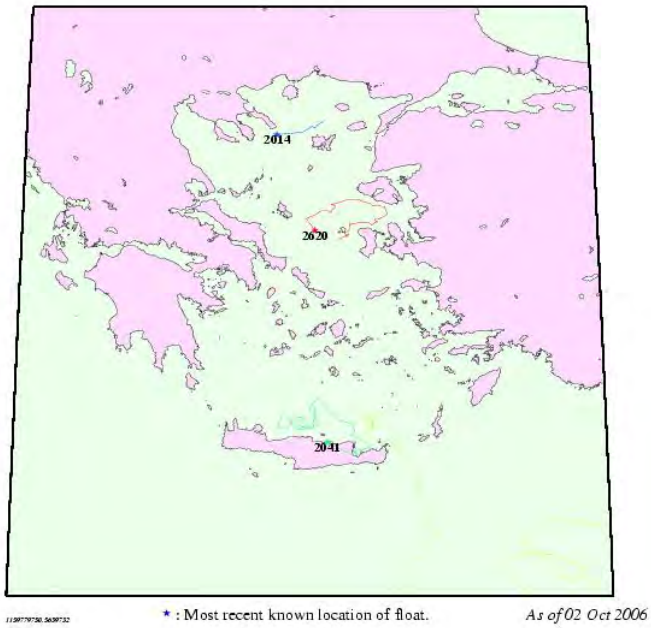

Figure 2. Trajectories of 3 profiling floats presently active in the Aegean Sea, deployed in 2005 and 2006.

RESULTS

An example of profile data from one float can be seen in Figure 3. We are now in the process of assembling all of the data and preparing the results for publication before the end of the grant period.

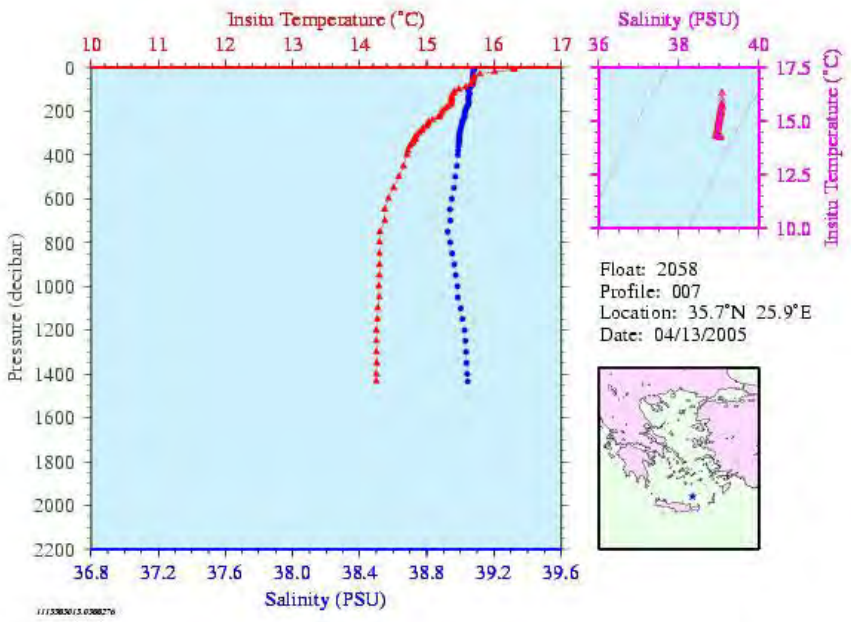

Figure 3. CTD profile from Float 2058 in the Aegean Sea.

IMPACT/APPLICATIONS

Eventually this work will serve to improve the CTD data base for the Aegean Sea and eastern Mediterranean Sea. We have trained 2 Greek scientists in the use of modern physical oceanographic instrumentation. These floats are being included in the "Med-Argo" program, conducted by 6 countries bordering the Mediterranean Sea. This is a project analogous to the global Argo program, but for the Mediterranean alone.

RELATED PROJECTS

We are carrying out a similar project, with ONR support, in the Black Sea with collaborators from Turkey and Ukraine (see *http://flux.ocean.washington.edu/metu*).